



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILED DATE	FIRST NAMED APPLICANT	D	ATTORNEY DOCKET NO.
---------------	------------	-----------------------	---	---------------------

GENERAL ELECTRIC COMPANY
CRD PATENT DOCKET RM 4A59
P O BOX 8 BLDG K-1 SALAMONE
SCHEECTADY NY 12301

LM21/1203

EXAMINER
NGUYEN, T

ART UNIT	PAPER NUMBER
----------	--------------

12/03/97

DATE MAILED:

NOTICE OF ALLOWABILITY

PART I

- This communication is responsive to the preliminary amendment filed on 08/25/1997.
- All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
- The allowed claims are 2-11, 14, 15-22 (now renumbered as 1-18).
- The drawings filed on 6/5/95 are acceptable.
- Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has [] been received. [] not been received. [] been filed in parent application Serial No. _____, filed on _____.
- Note the attached Examiner's Amendment.
- Note the attached Examiner Interview Summary Record, PTOL-413.
- Note the attached Examiner's Statement of Reasons for Allowance.
- Note the attached NOTICE OF REFERENCES CITED, PTO-892.
- Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
- APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
 - Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. _____. CORRECTION IS REQUIRED.
 - The proposed drawing correction filed on _____ has been approved by the examiner. CORRECTION IS REQUIRED.
 - Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
 - Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

Attachments:

- Examiner's Amendment
- Examiner Interview Summary Record, PTOL- 413
- Reasons for Allowance
- Notice of References Cited. PTO-892
- Information Disclosure Citation. PTO-1449
- Notice of Informal Application, PTO-152
- Notice re Patent Drawings, PTO-948
- Listing of Bonded Draftsmen
- Other **"IMPORTANT NOTE"**

TAN Q. NGUYEN
PRIMARY PATENT EXAMINER

1. EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

2. This communication is an Examiner's reasons for allowance in response to application filed on August 25, 1997, assigned serial 08/924,478 and titled "**REDUCED-POWER GPS-BASED SYSTEM FOR TRACKING MULTIPLE OBJECTS FROM A CENTRAL LOCATION**", which is a continuation application under 37 CFR. 1.62 of prior application Serial No. 08/456,229, filed on May 31, 1995.

3. The following is the Examiner's statement of reasons for the indication of allowable subject matter:

a. After carefully reviewing the application in light of the prior art of record, the amended claims, the newly added claims, and the additional search of all the possible areas relevant to the present application, a set of related prior art references has been found, but those prior art references are not deemed strong to make the application unpatentable. Thus, it is found that the application is now in condition for allowance.

b. Although the prior art disclose several claimed limitations, none of the references teaches a method for identifying location of an object to be tracked which

includes the steps of measuring data related to propagation time difference between signals transmitted from a plurality of GPS satellites and received at the object to be tracked, wherein the data comprising code word phase measurements as recited in claim 3, transmitting the data to central station, and calculating at the central station the location of the object to be tracked based upon the transmitted data and data derived from at least one receiver apart from the object receiving the signals from the plurality of satellites. Also, neither references teaches the step of measuring data related to propagation time differences between the signals transmitted from a plurality of GPS satellites and received at the objected to be tracked, wherein the data comprising bit phase measurement recited in claim 4.

c. The limitation "said data comprising receiver code-time offsets for a satellite i and defined as time elapse to a time t_R from the beginning of a code word in the signal form satellite i in which t_R falls, and code period in the signal received from satellite i in which t_R falls, said plurality of satellites comprising GPS satellites, and including the additional step of simultaneously deriving said receiver code-time offsets and code periods from signals received from the plurality of satellites at said object to be tracked" in claim 6 renders the claim nonobvious over the prior art of record.

d. Although the prior art disclose several claimed limitations, none of the references teach a method of identifying location of an objected to be tracked which

includes the steps of "assuming a feasible value ... to reach the central station", "calculating the location of said object ... the assumed value of said communication", "calculating a new value ... the calculated location of said object to be tracked", and "calculating a corrected location ... the calculation new value for said communication time delay" as cited in claim 9. Furthermore, the limitations "measuring means for measure data ... said object to be tracked including", "first processor means for processing data from the receiving means ... said data being related to propagation time differences for said signals" in claim 14 render the claim nonobvious over the prior art of record.

e. Though the prior art describes topics relevant to application generation and application runtime, the "first processor means for calculating a receiver bit phase ... being defined as the bit period for satellite i at the time t_R in the signal received from satellite i" and "first processor means for calculating a bit-time offset ... said bit period for satellite i being determined at the time t_R in the signal received from satellite i" as recited in the claims 18 and 19, respectively, are not specifically disclosed and/or made obvious by the prior art of record.

f. Claims 2-11, 14, and 16-22 are allowable over the prior art of record (now renumbered as 1-18).

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Tan Nguyen, whose telephone number is (703) 305-9755. The examiner can normally be reached on Monday-Thursday from 7:30 AM-6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J. Teska, can be reached on (703) 305-9704.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-5357 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

/tqn
December 01, 1997

Tan Nguyen
TAN Q. NGUYEN
PATENT EXAMINER



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

LM21/1203

GENERAL ELECTRIC COMPANY
CRD PATENT DOCKET RM 4A59
P O BOX 8 BLDG K-1 SALAMONE
SCHEIECTADY NY 12301

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/924,478	08/25/97	018	NGUYEN, T	2763 12/03/97
First Named Applicant	HARRISON, DANIEL D.			

TITLE OF INVENTION: REDUCED-POWER GPS-BASED SYSTEM FOR TRACKING MULTIPLE OBJECTS FROM A CENTRAL LOCATION

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEES DUE	DATE DUE
2 RD-25.842FW	701-207.000	U82	UTILITY	NO	\$1320.00	03/03/98

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number.

Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.